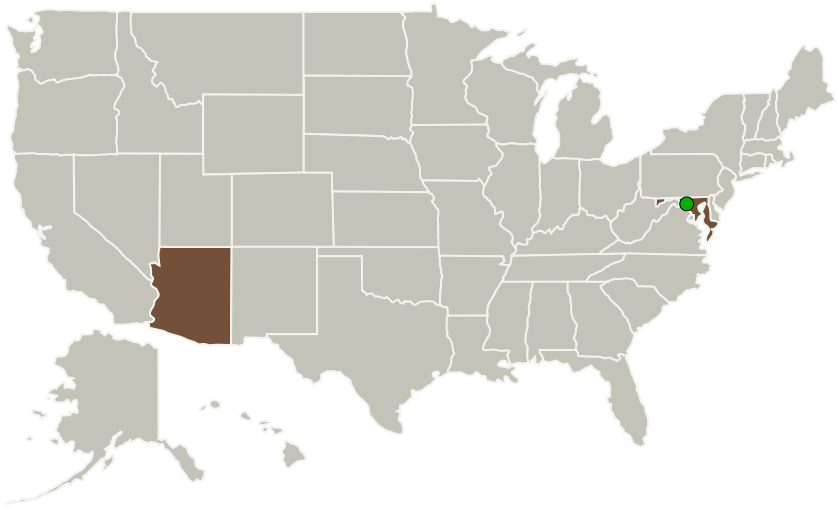
Polarization Maintaining Coherent Fiber Bundle Array, Phase I

Completed Technology Project (2010 - 2010)

Project Introduction

Future NASA flight missions are considering passive wavefront and amplitude control in astronomical applications such as the search for exo-planets. NASA's Discovery mission proposal called out the need for a coherent 2-dimensional array of fiber bundles for this application. In this SBIR proposal we propose to develop monolithic polarization maintaining (PM) coherent fiber bundle arrays consisting of 1,600 fibers with core-to-core spacing of 80 micron with placement accuracy of < 2 micron. In Phase I we will design and develop specialty glasses and fibers and demonstrate a 2D array with 16 cores to prove the feasibility of this proposal.

Primary U.S. Work Locations and Key Partners



Organizations Performing Work	Role	Type	Location
AdValue Photonics, Inc.	Lead Organization	Industry Small Disadvantaged Business (SDB)	Tucson, Arizona
Goddard Space Flight Center(GSFC)	Supporting Organization	NASA Center	Greenbelt, Maryland

Polarization Maintaining Coherent Fiber Bundle Array, Phase I

Table of Contents

Polarization Maintaining Coherent Fiber Bundle Array, Phase I

Completed Technology Project (2010 - 2010)

Primary U.S. Work Locations	
Arizona	Maryland

Project Transitions

January 2010: Project Start

July 2010: Closed out

Closeout Documentation:

- Final Summary Chart*(https://techport.nasa.gov/file/139339)*

Organizational Responsibility

Responsible Mission Directorate:

Space Technology Mission Directorate (STMD)

Lead Organization:

AdValue Photonics, Inc.

Responsible Program:

Small Business Innovation Research/Small Business Tech Transfer

Project Management

Program Director:

Jason L Kessler

Program Manager:

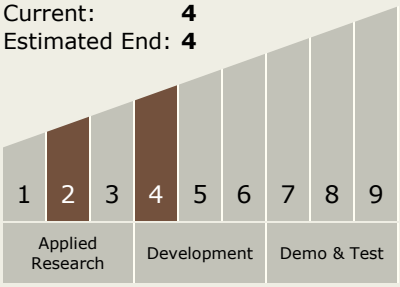
Carlos Torrez

Principal Investigator:

Shibin S Jiang

Technology Maturity (TRL)

Start: **2**
Current: **4**
Estimated End: **4**



Polarization Maintaining Coherent Fiber Bundle Array, Phase I

Completed Technology Project (2010 - 2010)

Technology Areas

Primary:

- TX08 Sensors and Instruments
  - TX08.1 Remote Sensing Instruments/Sensors
    - TX08.1.1 Detectors and Focal Planes

Target Destinations

The Moon, Mars, Outside the Solar System, The Sun, Earth, Others Inside the Solar System